

CLAIMS

At least the following is claimed:

- 1 1. A system comprising:
2 a transformer having a primary and a secondary winding, the secondary winding having a
3 housing, the secondary winding having a first and a second terminal, the secondary winding having
4 an insulated covering; and
5 a positive temperature coefficient device, the polymer positive temperature coefficient device
6 connected to the first terminal of the secondary winding, the positive temperature coefficient device
7 mounted in the housing, the positive temperature coefficient device having a first and second side,
8 wherein the first side of the positive temperature coefficient device is mounted between .2 mm and
9 .4 mm from the secondary winding, wherein the second side of the positive temperature coefficient
10 device is mounted between 1 mm and 5 mm from the secondary winding, and wherein the insulated
11 covering is between the first side of the positive temperature coefficient device and the secondary
12 winding.
- 1 2. The system of claim 1, where the system is a NEMA class 2 transformer.
- 1 3. The system of claim 1, where the voltage rating between the first and second lead
2 of the secondary winding is 24 volts.
- 1 4. The system of claim 1, where the transformer is a 75 VA transformer.
- 1 5. The system of claim 1, where the housing is plastic.
- 1 6. The system of claim 1, where the housing has an end-bell-coil-cover portion and
2 the positive temperature coefficient device is mounted inside the end-bell-coil-cover portion.

1 7. The system of claim 1, where the insulated covering is generally .25 mm thick.

1 8. The system of claim 1, where the insulated covering is generally a class "B".

1 9. The system of claim 1, where the positive temperature coefficient device is a
2 polymer positive temperature coefficient device.

1 10. The system of claim 1, where the positive temperature coefficient device is a
2 ceramic positive temperature coefficient device.

1 11. The system of claim 1, where the positive temperature coefficient device is a
2 polymer positive temperature coefficient device with a trip temperature of 95 and 105 degrees
3 Celsius.

1 12. The system of claim 1, where the positive temperature coefficient device is
2 mounted using a crimp joint.

1 13. The system of claim 1, where the positive temperature coefficient device is a
2 Raychem RUE device.

1 14. A system comprising:

2 a transformer having a primary and a secondary winding, the secondary winding having a
3 housing, the secondary winding having a first and a second terminal, the secondary winding
4 having an insulated covering; and

5 a positive temperature coefficient device, the polymer positive temperature coefficient
6 device connected to the first terminal of the secondary winding, the positive temperature
7 coefficient device mounted in the housing, wherein the positive temperature coefficient device
8 mounting geometry is based on trip times for the positive temperature coefficient device in
9 comparison to the distance the positive temperature coefficient device is mounted from the
10 secondary winding, the type of insulated covering, the thickness of the insulated covering, and the
11 mounting arrangement for the positive temperature coefficient device.

1 15. The system of claim 14, where the positive temperature coefficient device is a
2 polymer positive temperature coefficient device.

1 16. The system of claim 14, where the positive temperature coefficient device is a
2 ceramic positive temperature coefficient device.

1 17. The system of claim 14, where the positive temperature coefficient device is a
2 polymer positive temperature coefficient device with a trip temperature of 95 and 105 degrees
3 Celsius.

1 18. The system of claim 14, where the positive temperature coefficient device is
2 mounted using a crimp joint.

1 19. A system comprising:

2 a transformer having a primary and a secondary winding, the secondary winding having a
3 housing, the secondary winding having a first and a second terminal, the secondary winding
4 having an insulated covering; and

5 a means for automatic positive temperature coefficient protection, the means connected to
6 the first terminal of the secondary winding, the means mounted in the housing, wherein the
7 mounting geometry of the means is based on trip times for the means in comparison to the
8 distance the means is mounted from the secondary winding, the type of insulated covering, the
9 thickness of the insulated covering, and the mounting arrangement for the means.

10 20. The system of claim 19, where the means for positive temperature coefficient
11 protection includes a polymer.

12 21. The system of claim 19, where the means for positive temperature coefficient
13 protection includes a ceramic.

14 22. The system of claim 19, where the means for positive temperature coefficient
15 protection has a trip temperature of between 95 and 105 degrees Celsius.

16 23. The system of claim 19, where the means for positive temperature coefficient
17 protection is mounted using a crimp joint.

24. A method comprising the steps of:

1 providing a transformer having a primary and a secondary winding, the secondary winding
2 having a housing, the secondary winding having a first and a second terminal, the secondary winding
3 having an insulated covering; and
4 mounting a positive temperature coefficient device to the first terminal of the secondary
5 winding, where the positive temperature coefficient device is mounted in the housing, where the
6 positive temperature coefficient device mounting geometry is based on trip times for the positive
7 temperature coefficient device in comparison to the distance the positive temperature coefficient
8 device is mounted from the secondary winding, the type of insulated covering, the thickness of the
9 insulated covering, and the mounting arrangement for the positive temperature coefficient device.

1 25. The method of claim 24, where the positive temperature coefficient device is a
2 polymer positive temperature coefficient device.

1 26. The method of claim 24, where the positive temperature coefficient device is a ceramic
2 positive temperature coefficient device.

1 27. The method of claim 24, where the positive temperature coefficient device is a
2 polymer positive temperature coefficient device with a trip temperature of 95 and 105 degrees
3 Celsius.

1 28. The method of claim 24, where the positive temperature coefficient device is mounted
2 using a crimp joint.